

## Push-in fittings NPQR

**FESTO**



## Key features

### Application



Choosing the right fitting is effortless. With a system that includes well over 1000 types of standard and function fittings, Festo offers a secure solution for every connection.

### Suitability for food contact



The push-in fittings NPQR are suitable for contact with food. They have the necessary declaration of conformity in accordance with EU Regulation (EC) No. 1935/2004.

### Summary of tubing/fitting combinations

Applications	Fitting	Tubing	Description
Standard	QS	PEN	Suitable for a wide range of tasks and attractively priced. Flexible thanks to highly resistant materials, easy to install thanks to optimised bending radii. High level of abrasion resistance in dynamic applications.
	QS	PUN	Maximum flexibility in standard applications thanks to an extremely wide range of options for combining the different types.
	QS	PAN	Meets all requirements, even for standard applications with increased pressure and temperature ranges.
High pressures	NPQM	PAN-MF	Meets DIN standard 73378: ideal for use in mobile pneumatics. Suitable for increased temperature ranges combined with high pressure ranges.
	NPQH	PAN-R	Powerful in pressure ranges up to 20 bar, for example in applications with the pressure booster DPA.
	NPQR	PUN-H-SF	Use in areas with higher pressure ranges and humidity. Tubing PUN-H-SF is resistant to kinking and hydrolysis and is suitable for water applications.
Resistant to chemicals and hydrolysis	NPQP	PLN	Resistant to cleaning agents, FDA-compliant and economical. Can be used instead of the combination with stainless steel fittings.
	NPKA	PUN-H	Hydrolysis-resistant and suitable for water applications. Combination suitable for use in cleanrooms, FDA-compliant and corrosion-resistant because it's 100% polymer. Very easy to install with the "one-click principle".
	NPQR	PFAN/PTFEN	Optimised design, fewer edges where dirt can collect – all at an attractive price. For high temperatures up to 150 °C. Pressure range up to 16 bar. Maximum corrosion resistance (CRC 4).
	NPCK	PFAN/PTFEN	Easy to clean thanks to the union nut's edge-free design. Maximum corrosion resistance (CRC 4) and FDA-compliant. Suitable for a wide range of media.
	CRQS	PFAN/PTFEN	Maximum corrosion resistance (CRC 4) and maximum resistance to aggressive acids and alkalis.
Resistant to chemicals and hydrolysis, food-safe	NPQR	PUN-H-F/PFAN	Food-safe to Regulation (EC) No. 1935/2004 and FDA-listed materials. Can be used in the food and packaging industry in combination with PUN-H-F and PFAN.
	NPQH	PFAN/PTFEN	For high temperatures up to 150 °C. Food-safe to Regulation (EC) No. 1935/2004, FDA-listed materials and resistant to cleaning agents.
Anti-static	NPQM	PUN-CM	Anti-static tubing plus solid metal fitting: maximum protection for electric and electronic components.
Flame-retardant	NPQM	PUN-V0	Very safe in areas where there is a risk of fire thanks to flame-retardant properties. The tubing has been tested to DIN 5510-2.
Resistant to welding spatter	NPQH	PUN-V0-C	Ideal for applications with welding spatter. Reliable thanks to a tubing wall thickness of 2 mm for all diameters.
	QS-V0	PAN-V0	Safe even in the immediate vicinity of welding spatter thanks to double-walled tubing with special fitting.
Battery production	NPQE-F1A <sup>1)</sup>	PUN-H	Suitable in battery production areas.

1) F1A = Free of copper, zinc and nickel

## Technical data

General technical data		
Pneumatic connection 1	Male thread M5; M7; G3/8; G1/2	Male thread G1/8; G1/4
Size	Standard	
Design	Push-pull principle	
Mounting position	Any	
Type of seal on the screwed trunnion	Sealing ring	
Nominal tightening torque [Nm]	1 ±20% for connecting thread M5	
	3 ±20% for connecting thread M7	
	6 ±20% for connecting thread G1/8 (exception NPQR-DK-G18-Q4: 3 ±20%)	
	7.5 ±20% for connecting thread G1/4	
	9 ±20% for connecting thread G3/8	
	9 ±20% for connecting thread G1/2	

Operating and environmental conditions		
Pneumatic connection 2	For tubing O.D. 4 mm; 6 mm; 8 mm; 10 mm; 12 mm	For tubing O.D. 14 mm, 16 mm
Operating pressure for entire temperature range	[MPa]	−0.095 ... +1.6
	[bar]	−0.95 ... +16
	[psi]	−13.775 ... +232
Note on operating pressure	Water: max. 0.7 MPa at 0 - 80°C	
Operating medium	Compressed air to ISO 8573-1:2010 [7:--]; water (liquid, ice-free)	
Note on the operating/pilot medium	Lubricated operation possible	
Ambient temperature <sup>1)</sup>	[°C]	−20 ... +150
Note on ambient temperature	—	With PUN-H: −20°C - 60°C
Corrosion resistance class CRC <sup>2)</sup>	4 - Particularly high corrosion stress	
Food-safe <sup>3)</sup>	See declaration of conformity	
	NSF/ANSI 169	
Certificate-issuing authority	NSF C0556009	

1) Observe the range of application of the plastic tubing.

2) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

3) More information: [www.festo.com/catalogue/npqr](http://www.festo.com/catalogue/npqr) → Support/Downloads.

Materials	
Housing material	High-alloy stainless steel
Releasing ring material	High-alloy stainless steel
Guard ring material	High-alloy stainless steel
Tube retaining claw material	High-alloy stainless steel
Thrust ring material	PPSU
Nut material (NPQR-H only)	High-alloy stainless steel
Tubing seal material	FPM
Threaded seal material	FPM
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B2-L
Suitable for the production of Li-ion batteries <sup>1)</sup>	Metals with more than 1% by mass of copper, zinc or nickel are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils.
Cleanroom class <sup>1)</sup>	Class 4 to ISO 14644-1 <sup>2)</sup>

1) More information: [www.festo.com/catalogue/npqr](http://www.festo.com/catalogue/npqr) → Support/Downloads.

2) For statically installed elements, no meaningful evaluation according to ISO 14644-1 is possible.

### Tube mounting/dismounting

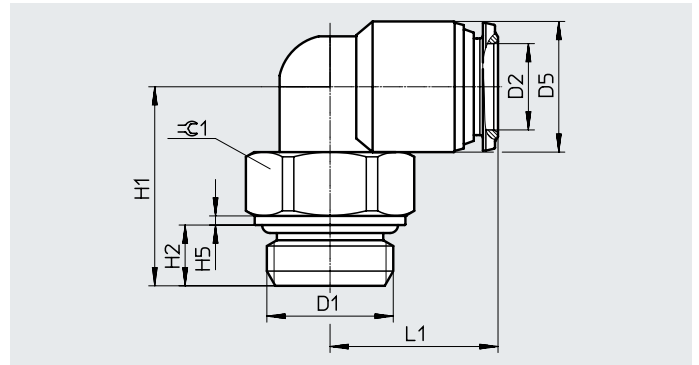
Mounting	Dismantling
<p>The prerequisite for ensuring that the inner seal is securely held and protected against damage is that the tube is cut into straight lengths and deburred.</p> <ol style="list-style-type: none"> <li>1) Insert tubing as far as the stop. It is important to ensure that the tubing is inserted into the inner seal. Depending on the tolerance between the tubing and the seal, the contact of the tubing with the seal may be wrongly interpreted as the stop.</li> <li>2) Check that the tubing connection is secure by pulling gently on the tube.</li> </ol>	<ol style="list-style-type: none"> <li>1) The tubing can be detached easily by pressing and holding down the releasing ring. Carefully remove the tubing from the fitting.</li> <li>2) Before re-using the tubing, remove the damaged part by cutting it off.</li> </ol>

## Datasheet

### Push-in L-fitting NPQR-L

Male thread with external hex  
Rotatable 360°

Design:  
L-shape



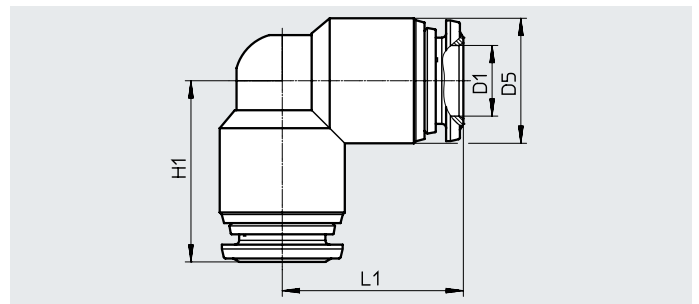
#### Dimensions and ordering data

Pneumatic connection		Nominal width [mm]	Dimensions [mm]						Tubing insertion depth [mm]	Weight/ piece [g]	Part no.	Type	PU <sup>1)</sup>
Male thread	For tubing O.D.		D5 ø	H1	H2	H5	L1	≈G1					
D1	D2												
<b>M thread with sealing ring</b>													
M5	4	2	10	16	4	3	15.5	8	11	8.3	8085679	NPQR-L-M5-Q4	1
	6	2	12.5	17.5	4	3	18	8	13.1	13.4	8098626	NPQR-L-M5-Q6	1
<b>G thread with sealing ring</b>													
G1/8	4	2	10	16	6	1	15.5	13	11	12.1	8085680	NPQR-L-G18-Q4	1
	6	4	12.5	17.5	6	1	18	13	13.1	16.4	8085681	NPQR-L-G18-Q6	1
	8	6	14.5	23	6	1	20	13	13	23.5	8085682	NPQR-L-G18-Q8	1
G1/4	6	4	12.5	20	8	1	18	15	13.1	21.6	8085683	NPQR-L-G14-Q6	1
	8	6	14.5	21	8	1	20	15	13	24.4	8085684	NPQR-L-G14-Q8	1
	10	8	17	27.5	8	0.9	23.5	15	15	36.5	8085685	NPQR-L-G14-Q10	1
G3/8	10	8	17	25	9	1.5	23.5	20	15	45	8085686	NPQR-L-G38-Q10	1
	12	10	20.5	30.5	9	1.5	27.5	20	17.4	65.3	8085687	NPQR-L-G38-Q12	1
G1/2	12	10	20.5	28.5	10	1.5	27.5	25	17.4	73.2	8085688	NPQR-L-G12-Q12	1
	14	12	21.5	33	10	1.5	27.5	25	21.5	83.6	8085689	NPQR-L-G12-Q14	1
	16	14	24	36.5	10	1.5	33	25	23.5	99.7	8085690	NPQR-L-G12-Q16	1

1) Packaging unit

### Push-in L-connector NPQR-L

Design:  
L-shape



#### Dimensions and ordering data

Pneumatic connection		Nominal width [mm]	Dimensions [mm]			Tubing insertion depth [mm]	Weight/ piece [g]	Part no.	Type	PU <sup>1)</sup>
For tubing O.D.			D5 ø	H1	L1					
D1										
4		3	10	16	16	11	7.8	8085709	NPQR-L-Q4-E	1
6		5	12.5	19.5	19.5	13.1	14.9	8085710	NPQR-L-Q6-E	1
8		7	14.5	21	21	13	20.4	8085711	NPQR-L-Q8-E	1
10		9	17	24.5	24.5	15	29.9	8085712	NPQR-L-Q10-E	1
12		11	20.5	29	29	17.4	51.8	8085713	NPQR-L-Q12-E	1
14		14	21.5	28.5	28.5	21.5	60.6	8085714	NPQR-L-Q14-E	1
16		16	24	33	33	23.5	83.8	8085715	NPQR-L-Q16-E	1

1) Packaging unit